

THE ODONATA, TRICHOPTERA, NEUROPTERA AND PLECOPTERA
OF WOOD WALTON FEN, HUNTINGDONSHIRE.

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Recently the Hon. N. Charles Rothschild very kindly gave me a large collection of *Odonata*, *Trichoptera*, and other Neuropteroid insects, numbering several hundreds, taken during the past season in Huntingdonshire on Wood Walton Fen, which is partly Mr. Rothschild's property. As it is very seldom that one has the opportunity of examining the results of the collecting of such insects in a restricted locality over a long period (extending from April 22nd to September 10th), and as in the present case the date of capture of each specimen has been carefully noted, it seems desirable to place these results on record.

Although no actual rarity is included, the collection may be regarded as giving a very good representation of the Neuropteroid fen fauna. It will be seen that dragon-flies form the bulk of the collection. They belong to 12 species and they comprise many teneral specimens, which have been freely taken along with the others of more mature age. The former, being less satisfactory for the cabinet, are usually avoided, and in the present case they add no little interest as they serve to show the continuous succession of fresh emergences which goes on over a considerable period in certain species. No attempt has been made to divide the teneral state into different grades, some of the specimens being in the limp state of the newly emerged imago, while others have attained a fairly firm condition. What appears to be a fairly good dividing point is to be found in the pterostigma and all specimens in which the mature coloration of that mark has not begun to show have been treated as teneral:—

The species are as follows:—

ODONATA.

Lestes sponsa, Hansemann.—1 ♂, 4 ♀ s.

June 30th, 1 ♀ (ten.). July 21st, 1 ♀ (ten.). July 26th, 1 ♂. July 28th 1 ♀ (ten.). August 5th, 1 ♀ (ten.).

Ichnura elegans, Vanderl.—44 ♂ s, 52 ♀ s.

May 28th, 2 ♂ (ten.); 4 ♀ (2 ten.). May 29th, 1 ♂ (ten.); 1 ♀ (ten.). May 31st, 3 ♂ (2 ten.); 2 ♀. June 1st, 2 ♂ (ten.); 3 ♀ (2 ten.). June 2nd, 5 ♂ (4 ten.); 8 ♀ (6 ten.). June 3rd, 3 ♂ (1 ten.); 3 ♀ (2 ten.). June 4th, 1 ♂; 1 ♀ (ten.). June 5th, 2 ♂ (ten.); 4 ♀ (ten.). June 8th, 1 ♀. June 12th, 1 ♂ (ten.); 3 ♀ (ten.). June 13th, 2 ♂ (1 ten.). June 14th, 3 ♂ (2 ten.); 2 ♀ (ten.). June 15th, 1 ♂ (1 ten.). June 16th, 1 ♂; 2 ♀ (1 ten.). June 17th,

1 ♂ (1 ten.); 1 ♀ (ten.). June 18th, 3 ♀ (2 ten.). June 19th, 1 ♀ (ten.). June 21st, 4 ♂ (2 ten.); 3 ♀ (1 ten.). June 22nd, 2 ♂ (ten.); 1 ♀ (ten.). June 26th, 1 ♀ (ten.). June 27th, 1 ♂; 1 ♀. June 30th, 1 ♂ (ten.); 1 ♀ (ten.). July 2nd, 1 ♀. July 13th, 2 ♂ (ten.). July 14th, 1 ♀ (ten.). July 20th, 1 ♂ (ten.); 1 ♀. July 21st, 2 ♂; 2 ♀. July 26th, 1 ♂. July 28th, 1 ♂. August 9th, 1 ♂ (ten.); 1 ♀.

Enallagma cyathigerum, Charp.—5 ♂ s, 4 ♀ s.

June 18th, 1 ♂ (ten.). June 21st, 1 ♂ (ten.). June 26th, 1 ♂ (ten.). July 8th, 1 ♀ (ten.). July 12th, 1 ♀ (ten.). July 14th, 1 ♀ (ten.). July 21st, 1 ♂. July 26th, 1 ♀. August 7th, 1 ♂ (ten.).

Agrion pulchellum, Vanderl.—39 ♂ s, 38 ♀ s.

May 20th, 1 ♂ (ten.). May 25th, 1 ♀ (ten.). May 26th, 1 ♀ (ten.). May 27th, 3 ♀ (ten.). May 28th, 13 ♂ (8 ten.); 3 ♀ (1 ten.). May 29th, 1 ♂ (ten.); 3 ♀ (1 ten.). May 31st, 5 ♀ (2 ten.). June 1st, 2 ♀ (1 ten.). June 2nd, 2 ♂ (1 ten.); 2 ♀ (1 ten.). June 3rd, 7 ♂ (1 ten.); 3 ♀. June 4th, 1 ♂; 2 ♀ (ten.). June 5th, 1 ♂ (ten.); 1 ♀ (ten.). June 8th, 1 ♂. June 11th, 1 ♀ (ten.). June 12th, 2 ♂ (1 ten.); 1 ♀ (ten.). June 14th, 2 ♂ (1 ten.); 2 ♀ (1 ten.). June 17th, 1 ♂; 1 ♀. June 21st, 3 ♂; 1 ♀. June 22nd, 3 ♂; 3 ♀ (1 ten.). June 26th, 1 ♀. July 11th, 1 ♀. July 26th, 1 ♀. July 30th, 1 ♂.

Agrion puella, Linné.—37 ♂ s, 30 ♀ s.

May 23rd, 1 ♂ (ten.). May 25th, 4 ♂ (3 ten.); 2 ♀. May 26th, 1 ♂; 1 ♀ (ten.). May 27th, 4 ♂ (3 ten.); 1 ♀ (ten.). May 28th, 7 ♂ (2 ten.); 9 ♀. May 29th, 3 ♂; 3 ♀. May 30th, 1 ♀. May 31st, 4 ♀. June 1st, 1 ♀ (ten.). June 2nd, 3 ♂ (1 ten.); 2 ♀. June 3rd, 8 ♂, 4 ♀. June 11th, 1 ♂. June 14th, 3 ♂. June 15th, 1 ♂. June 21st, 1 ♀; 1 ♂ data lost. June 22nd, 1 ♂.

Pyrrosoma nymphula, Sulzer.—13 ♂ s, 17 ♀ s.

May 14th, 2 ♂; 4 ♀. May 15th, 1 ♂. May 22nd, 1 ♀. May 25th, 1 ♂; 2 ♀ (1 ten.). May 26th, 1 ♀ (ten.). May 27th, 1 ♂; 2 ♀ (1 ten.). May 28th, 1 ♂; 2 ♀. May 29th, 1 ♀. May 30th, 1 ♀. June 1st, 3 ♂; 1 ♀. June 2nd, 1 ♂; 1 ♀. June 3rd, 3 ♂. June 22nd, 1 ♀.

Brachytron hafniense, Müller.—16 ♂ s, 1 ♀.

May 27th, 1 ♂. May 29th, 3 ♂. May 30th, 1 ♂. June 1st, 1 ♂. June 2nd, 4 ♂; 1 ♀. June 3rd, 5 ♂. June 22nd, 1 ♂.

Æschna cyanea, Müller.—6 ♂ s, 10 ♀ s.

July 12th, 2 ♂ (1 ten.). July 13th, 1 ♀. July 26th, 1 ♀. August 1st, 1 ♀. August 6th, 1 ♀. August 16th, 1 ♀. August 17th, 1 ♂. August 19th, 2 ♂. August 20th, 3 ♀. August 31st, 1 ♀. September 3rd, 1 ♀. September 4th, 1 ♂.

Æschna grandis, Linné.—9 ♂ s, 3 ♀ s.

July 29th, 1 ♂. August 8th, 1 ♂. August 19th, 1 ♀. August 20th, 2 ♂, 1 ♀. August 23rd, 1 ♂. August 26th, 2 ♂. August 27th, 1 ♀. August 29th, 2 ♂.

Libellula quadrimaculata, Linné.—5 ♂s, 2 ♀s.

May 27th, 1 ♂ (ten.). June 3rd, 1 ♂. June 4th, 3 ♂ (ten.). June 15th, 1 ♀. June 17th, 1 ♀.

Sympetrum striolatum, Charp.—12 ♂s, 16 ♀s.

June 12th, 1 ♀ (ten.). June 29th, 2 ♀ (ten.). July 6th, 1 ♂ (ten.). July 9th, 1 ♀ (ten.). July 14th, 1 ♀ (ten.). July 23rd, 1 ♀ (ten.). July 25th, 1 ♀ (ten.). July 30th, 1 ♂ (ten.). August 1st, 2 ♂ (ten.). August 14th, 2 ♀ (1 ten.). August 20th, 1 ♀. August 27th, 2 ♂; 1 ♀. August 29th, 1 ♀. September 3rd, 1 ♂; 2 ♀. September 4th, 1 ♂. September 6th, 1 ♂. September 9th, 3 ♂. September 11th, 2 ♀.

Sympetrum sanguineum, Müller.—4 ♂s, 7 ♀s,

June 26th, 1 ♀ (ten.). June 30th, 1 ♂ (ten.). July 2nd, 1 ♂ (ten.). July 11th, 1 ♀ (ten.). July 28th, 4 ♀ (3 ten.). July 30th, 1 ♂ (1 ten.). August 28th, 1 ♂. August 29th, 1 ♀.

TRICHOPTERA.

Phryganea grandis, Linné, 1 ♂, June 2nd; 1 ♂, July 29th.

Agrypnia pagetana, Curt., 2 ♂, August 10th; 2 ♂, August 14th; 1 ♂, August 28th.

Colpotaulius incisus, Curt., 1 ♂, August 30th.

Grammotaulius nitidus, Müller, 1 ♂, June 28th; 1 ♂, July 13th; 1 ♀, July 29th.

Grammotaulius atomarius, F., 1 ♂, May 20th; 1 ♀, May 29th; 1 ♀, June 19th.

Limnophilus flavicornis, F., 1 ♀, July 29th.

Limnophilus marmoratus, Curt., 1 ♂, August 26th.

Limnophilus affinis, Curt., 2 ♀, May 23rd; 1 ♀, May 27th; 1 ♂, June 18th; 1 ♀, July 7th; 1 ♂, August 28th.

Stenophylax permistus, McL., 1 ♂, September 10th.

Trienodes bicolor, Curt., 1 ♀, August 19th.

Æcetis ochracea, Curt., 1 ♀, August 22nd.

Æcetis lacustris, Pict., 1 ♂, August 3rd; 1 ♀, August 19th.

Polycentropus flavomaculatus, Pict., 1 ♀, August 30th.

Holocentropus stagnalis, Albarda, 2 ♀, May 2nd; 1 ♂, May 4th; 1 ♀, May 11th; 1 ♀, May 17th; 1 ♂, May 19th; 1 ♀, May 31st; 1 ♂, June 2nd.

Cyrnus flavidus, McL., 2 ♂, August 14th—22nd.

NEUROPTERA.

Sialis lutaria, Linné, 7 examples, April 22nd, 29th; May 2nd, 3rd, 10th, 27th; June 3rd.

Hemerobius lutescens, F., 2 ♀, May 24th, June 8th.

Hemerobius subnebulosus, Steph., 2 ♂, August 18th, 19th.

Chrysopa flava, Scop., 1, June 12th.

Chrysopa tenella, Schn., 1, July 13th.

Chrysopa vulgaris, Schn., 1, September 4th; 1, September 7th.

Chrysopa phyllochroma, Wasm., 1, June 30th.

Chrysopa perla, Linné, 3, May 24th; 1, May 26th; 1, June 2nd.

Panorpa communis, Linné, 1 ♂, May 20th.

PLECOPTERA.

Nemoura variegata, Oliv., 1 ♂, April 30th; 1 ♂, May 10th; 1 ♀, May 11th.

A few notes on some of the species may be added. It is difficult to explain the scanty number of *Lestes sponsa* and *Enallagma cyathigerum*. The *Lestes* is usually common where it occurs; *E. cyathigerum* is also rather common as a rule, although Ris points out (die schweizerischen Libellen, 1885), that where it occurs along with *I. elegans* and *Agrion puella* and *pulchellum* in Switzerland, it is decidedly not so common as the others.

Of *Ischnura elegans*, six of the females belong to the orange form. Pairs of this species were taken on June 16th and 27th.

In *Agrion pulchellum* there are three males with the second abdominal segment marked as in *puella*. Pairs occurred on June 2nd and 21st.

Agrion puella. The most noteworthy variation in the ♂ is represented by three examples in which the lateral lines of the marking on the 2nd abdominal segment are separated from the transverse line. A pair captured June 2nd.

Pyrrhosoma nymphula. Pairs, June 1st and 2nd.

Brachytron hafniense. The comparatively short period of flight in this species is well known. It seems to last just about a month as a rule.

Æschna grandis. Ris (*op. cit.*, p. 34) remarks that the females of this species are decidedly more numerous than the males, but this does not appear to be the case universally; the males being represented in the present collection in the proportion of 3 to 1 female. On the other hand, in *Æ. cyanea*, the females are strongly in the majority.

The comparative absence of mature specimens of *Sympetrum sanguineum* may be due to its rather active and wary habits.

Reference to the *Odonata* of Huntingdonshire will be found in Ent. Mo. Mag., XXXIII, pp. 275-8 (Morton), and in sundry notes in the "Entomologist" for 1907 and the succeeding years, by Mr. F. W. Campion and Mr. Herbert Campion.

Edinburgh:

November 2nd, 1913.